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TECHNICAL REPORT

PROJECT DESCRIPTION: VIETNAM CLIMATE IMPACTS DECISION SUPPORT TOOL

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ACRONYMS

CIMPACT-DST	Climate Impacts Decision Support Tool
DCEA	Danish Center for Environmental Assessment
IMHEN	Institute of Meteorology, Hydrology, and Environment
IRURE	Institute for Environmental Planning, Urban-Rural Infrastructure
MOC	Ministry of Construction
MONRE	Ministry of Natural Resources and Environment
NISTPASS	National Institute for Science and Technology Policy and Strategy Studies
SEA	Strategic Environmental Assessment
USAID	United States Agency for International Development
VIUP	Vietnam Institute for Urban-Rural Planning

1. DOCUMENT OVERVIEW

Cascadia Consulting Group (Cascadia), on behalf of the U.S. Agency for International Development (USAID) and in collaboration with the Vietnam Institute for Environmental Planning, Urban-Rural Infrastructure (IRURE) and the Vietnam Institute for Urban-Rural Planning (VIUP), plans to configure, test, and deploy Cascadia's Climate Impacts Decision Support Tool (CIMPACT-DST, the "Tool") at the national level in support of integrating climate change considerations into planning activities in cities and provinces in Vietnam.

This *Project Description,* part of a series of project documents being crafted to guide customization of the Tool, describes the concepts, goals, objectives, and target users for the Tool, including detail on project task timelines and responsibilities.

The document begins with an overview of key points, decisions, and outcomes of the document and then follows with descriptions of:

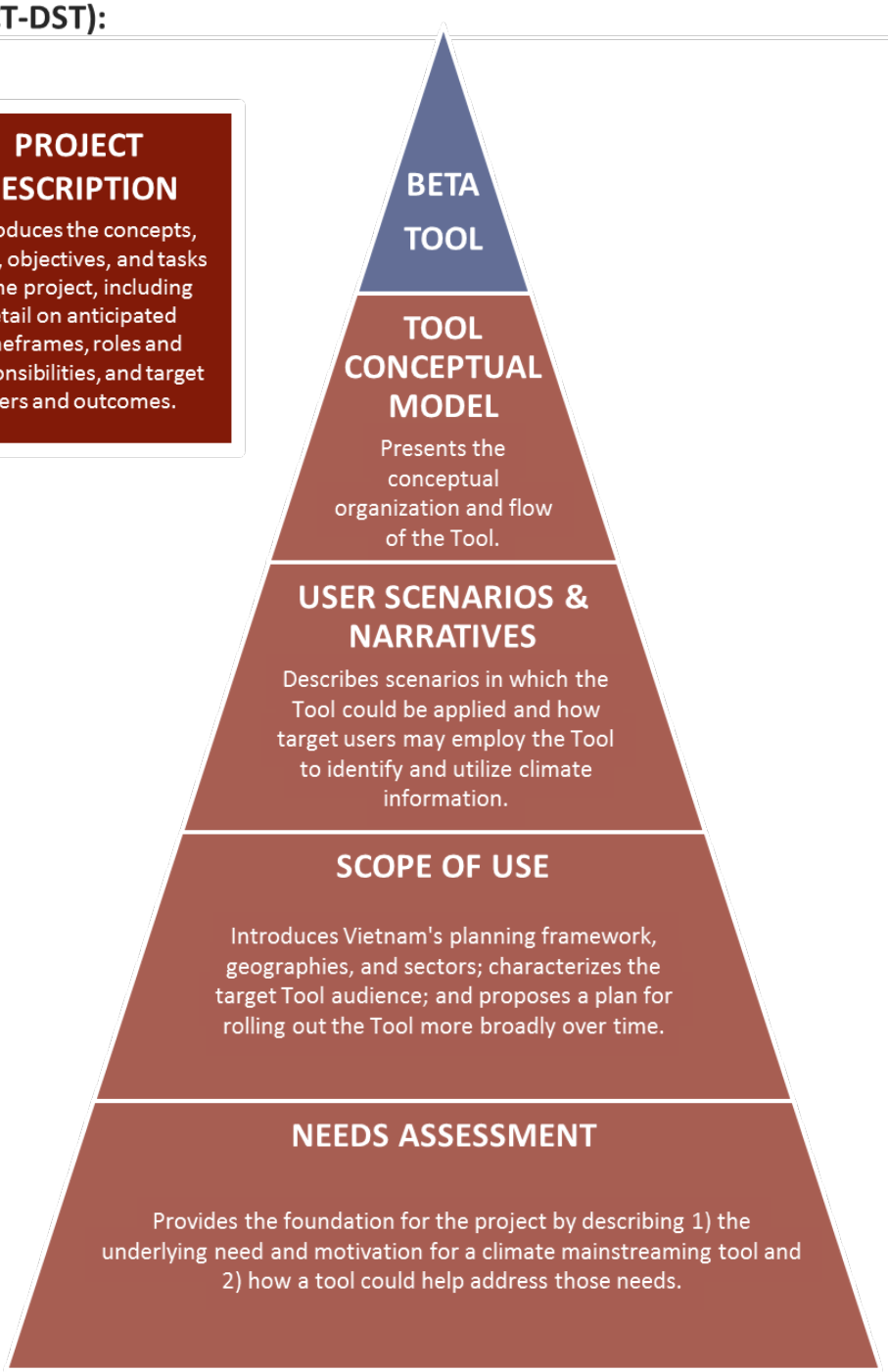
- Project tasks and objectives, including timelines for implementation and delineation of project roles and responsibilities
- Underlying project concepts and goals

PROJECT DOCUMENTS FOR NATIONAL VIETNAM CLIMATE PLANNING TOOL

This Project Description is part of a series of documents being crafted to guide customization of the national Vietnam climate planning tool (CIMPACT-DST):

PROJECT DESCRIPTION

Introduces the concepts, goals, objectives, and tasks of the project, including detail on anticipated timeframes, roles and responsibilities, and target users and outcomes.



2. EXECUTIVE SUMMARY

This *Project Description* document arrives at the following six key project points, decisions, and outcomes:

1. The primary objective of the project is to, in collaboration with VIUP and IRURE, tailor Cascadia's Climate Impacts Decision Support Tool (CIMPACT-DST) to provide an easy-to-use decision support tool for urban planners throughout Vietnam that supports systematic integration of climate change considerations into urban planning and land use decision-making, with the ultimate goal of contributing towards climate resilience building in Vietnam.

2. The Target Users and Audience of the Tool are urban planners that work for or are contracted by the Vietnamese government to develop regional, general, detailed/zoning, or specialized technical infrastructure plans for provinces or municipalities of Vietnam.

3. Completion of the project will include accomplishment of the following objectives by August 2014:

#	Objective	Timeframe
1	Characterize Tool User Needs	Present – Feb
2	Finalize Tool Use Scope, Scenarios, and Systems	Present – Feb
3	Explore and Gather Climate Impacts and Best Practices Information	Present – Feb
4	Develop a Tool Template	Jan – March
5	Beta-test and Transfer the Tool to Local Ownership	April
6	Deploy and Disseminate the Tool	May – July

4. In meeting the above project objectives, IRURE and VIUP will assume the following responsibilities:

IRURE/VIUP Responsibility	Timeframe
Review project planning and development documents, as needed	Ongoing
Identify and select beta-user team	April
Participate in beta-testing	April
Help coordinate and provide representation at up to three site visits	April
Review draft training, user, and administrative materials	May – June
Participate in Tool training	June
Participate in and help coordinate final Tool dissemination workshop	July

5. In meeting project objectives, Cascadia will assume the following responsibilities:

Cascadia Responsibility	Timeframe
Generate, revise, and finalize drafts of project planning and development projects	Ongoing
Generate, revise, and finalize drafts of Tool content, including climate impacts, guidance, and available spatial information	Feb – May
Participate in up to three site visits to confirm Tool content and usability	April
Conduct beta-testing	April
Generate, revise, and finalize beta and final English and Vietnamese Tool	Feb – June
Generate, revise, and finalize Tool testing and training materials	April – June
Conduct Tool training	June
Coordinate and lead final Tool dissemination workshop	July

6. The Tool will utilize the following climate change adaptation and resilience-building concepts:

    1. Climate impacts can threaten primary development goals.
    2. Adaptation means building resilience to anticipated impacts.
    3. Project-specific and system-wide resilience are needed.
    4. "Mainstreaming" is an efficient and effective means to build system-wide resilience.
    5. Mainstreaming involves understanding both the impacts and response strategies that apply to a particular project.
    6. Decision-support tools facilitate the mainstreaming process.

3. BACKGROUND AND PROJECT RATIONALE

Vietnam is vulnerable to a number of climate impacts. In particular, Vietnam has particularly high exposure and sensitivity to sea level rise: the country has over 3000 km of low elevation coastal lands (defined here as the contiguous area along the coast that is less than 10 m above sea level) containing over fifty-percent of the country's population and approximately 300 coastal cities. Compounding this vulnerability, much of Vietnam is located within typhoon, cyclone, and flooding zones. These extreme natural disasters have resulted in significant loss of life and property damage in recent years.

Although Vietnam has applied various measures such as sea dike construction, improved river management systems, and forecasting and early warning systems for flood control, it is still extremely affected by floods. Urban sprawl leads to an increasing number of residents living in low-lying areas. Lack of financial support for dike system maintenance and design, inadequate settlement arrangement, and poor urban and land-use planning are a few among many factors that intensify the vulnerability of coastal areas. Climate change has been significantly affecting vulnerable groups, agriculture, natural and built environments, and socio-economic development in Vietnam in recent decades, and projections indicate that more intense rainfall events, sea level rise, and increasing temperatures will continue.

In order to respond to the real and significant risks posed by climate change, Decision No. 158/2008/QD-TTg was issued by Vietnam's Prime Minister outlining the "Approval of National Target Program to respond to Climate Change." Consistent with this policy, every Ministry and local authority needs to develop an action plan on climate change adaptation. Under the responsibility of MOC, there are a few on-going studies – including the assessment of climate change impacts on the construction sector, drafting of an action plan pertinent to the construction sector, and adjustment of urban master plans of coastal cities– to address climate change and sea level rise scenarios.

The existing approach for urban planning in Vietnam is essentially spatial planning inherited from the Soviet Union during the centralized economy period. As such, it is now considered inadequate for the path that the country is pursuing. A top-down and fixed approach seems to be too inflexible to keep pace with urbanization and market changes – especially in the context of globalization. A more strategic, participatory, and flexible approach to urban planning is necessary for Vietnam to succeed.

Urban planning in Vietnam has been identified for reform. A lack of skills and experience in responding to the new pressures of climate change (among other factors) make such a reform challenging. Despite its challenges, addressing climate change through urban planning may also present diverse opportunities for Vietnam. Adapting to and mitigating climate change calls for a strategic, participatory, and flexible approach to planning – an approach that can better serve today's growing population and economy than traditional approaches. The systematic integration of climate change considerations into urban planning could also result in benefits arising from critical evaluation of urban planning practices and processes, as well as and more environmentally responsible planning overall.

Cities, existing as both contributors to and victims of climate change, must consider strategies for both climate change *mitigation* and *adaptation*. Consideration of climate change in urban planning is currently

not mandated by law in Vietnam; as such, there have been few master plans that consider climate change in a systematic and comprehensive way. The Rockefeller Foundation's recent guidelines "Integration of Climate Change Considerations into Urban Planning in Vietnam," conducted by VIUP and IRURE in collaboration with the Institute for Social and Environment Transition (ISET) and Vietnam's National Institute for Science and Technology Policy and Strategy Studies (NISTPASS), provides some guidance on how to integrate climate change considerations into the urban planning process in Vietnam, including identification and evaluation of climate change impacts and preferred adaptation measures to respond to those impacts.[1]

Given this context, this proposal recommends establishing a configured and customized tool for integrating climate change information and guidelines into urban planning in Vietnam. The tool will facilitate implementation of the Rockefeller-funded guidelines and will provide a combined and comprehensive repository of Vietnam climate impacts and guidance resources. It is expected that the tool will also integrate and bolster the use of GIS and other spatial technology, which is currently underused in Vietnam.

4. TOOL USERS AND AUDIENCE

The anticipated users ("Users") of the Tool are urban planners who design regional, general, detailed/zoning, and/or specialized technical infrastructure plans for jurisdictions within Vietnam. Users need not be Vietnamese government staff—international contractors and NGOs will also be targeted as users. Users will vary in their specific duties, jurisdictional scopes, and levels of planning (see Figure 4-1 below). The audience for the Tool includes all Users, as well as consumers of planning information such as developers, regional government officials, departmental staff, and civil society more broadly.

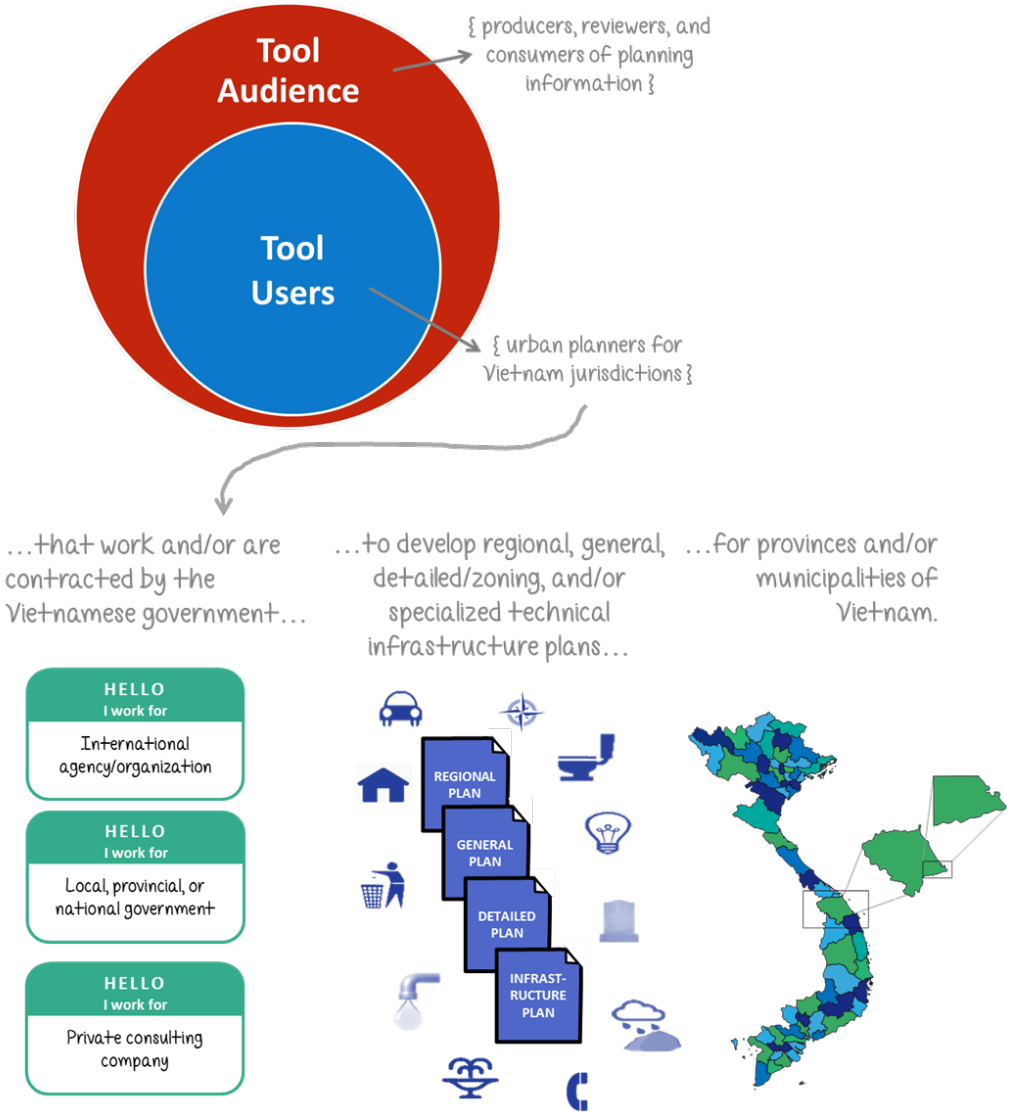


Figure 4-1. Target Users and Audience for Vietnam CIMPACT-DST

5. PROJECT TASKS AND OBJECTIVES

5.1 OBJECTIVES, TASKS, AND MILESTONES

Cascadia will design, develop, and distribute a climate impacts decision support tool that is usable and useful for urban planners across Vietnam. This will involve working with IRURE and VIUP to carry out the following objectives:

1. Characterize Tool User Needs
2. Finalize Tool Use Scope, Scenarios, and Systems
3. Explore and Gather Climate Impacts and Best Practices Information
4. Develop a Tool Template
5. Beta-test and Transfer the Tool to Local Ownership
6. Deploy and Disseminate the Tool

These objectives will be carried out over a year-long period from August 2013 to August 2014. The following sections include detail on each of the above objectives, including information on accompanying tasks, milestones, outcomes, and timelines for implementation. An overview of all objectives is provided in Figure 5-1 on the following page.

Please note that timeframes included in this document are tentative and subject to change. Any date changes will be finalized in writing and mutually agreed upon by Cascadia, IRURE, and VIUP.

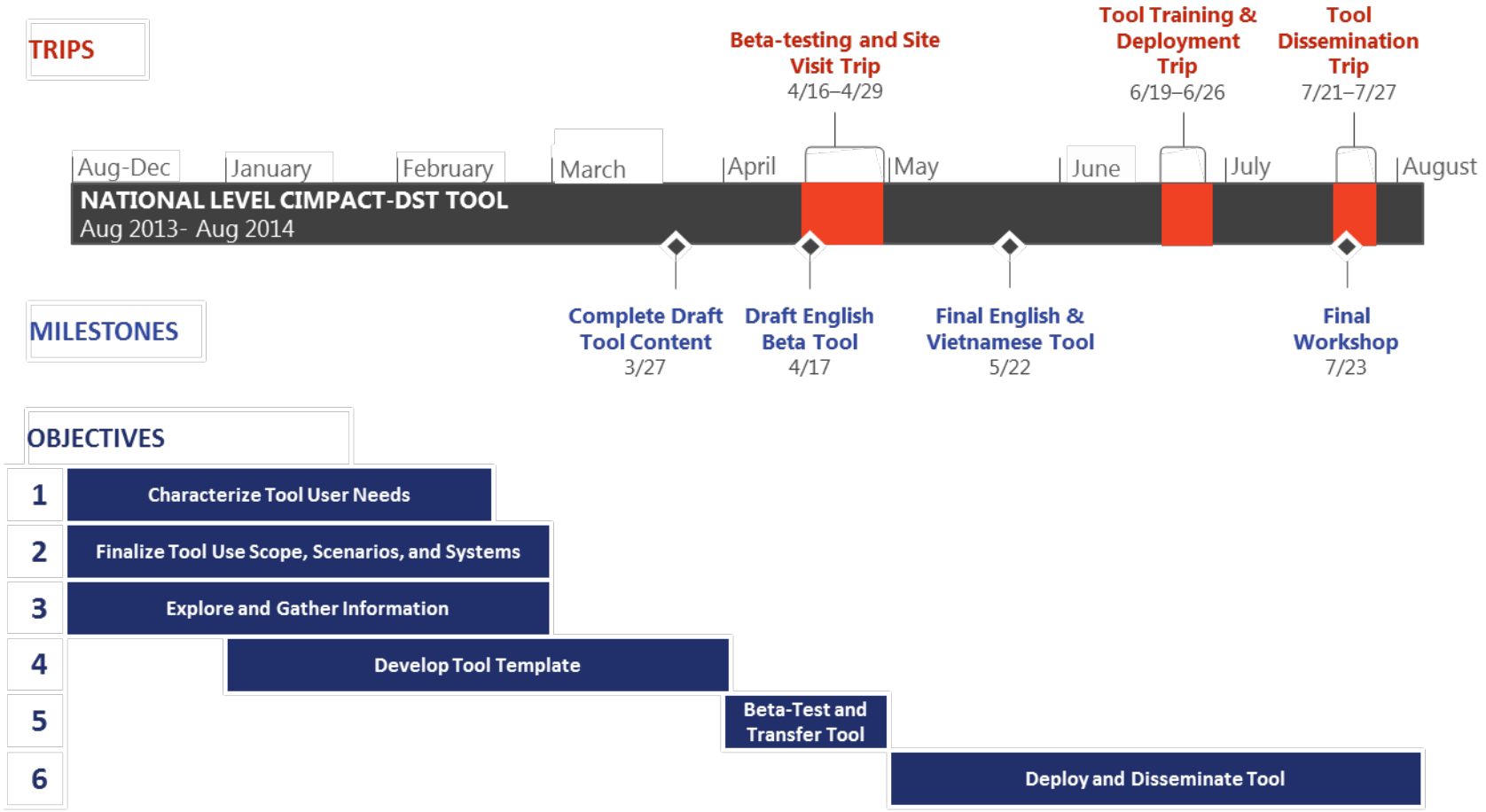


Figure 5-1. Timeline for Vietnam National CIMPACT-DST

5.1.1 CHARACTERIZE TOOL USER NEEDS

Timeframe	Dec 2013 – March 2014
Cascadia Tasks	▪ Complete draft of Needs Assessment for review (2/21) ▪ Finalize Needs Assessment document through consultation with core advisc from IRURE/VIUP (3/6)
VIUP/IRURE Tasks	▪ Review (2/28) Needs Assessment document
Deliverables/ Outcomes	▪ Final Needs Assessment document (3/6)

Cascadia will work with IRURE to characterize the various motivations and areas of need that th might address to best benefit the urban planning community within Vietnam. Cascadia will ultima these findings to inform tool design, format, and content.

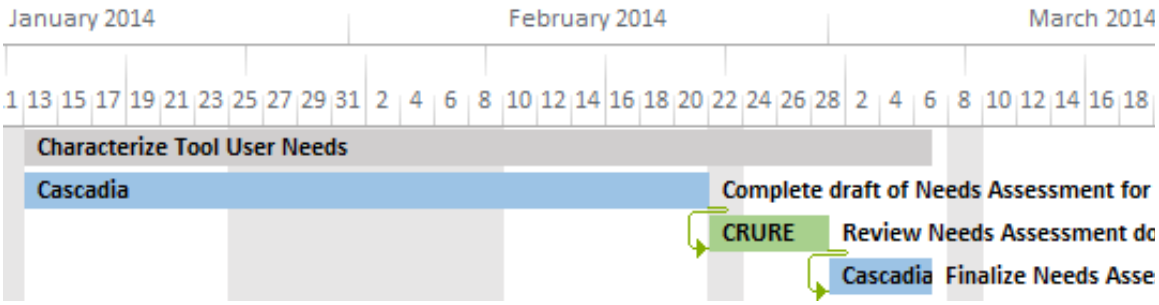


Figure 5-2. Task Timeline for Objective 1: *Characterize Tool User Needs*

5.1.2 FINALIZE TOOL USE SCOPE, SCENARIOS, AND SYSTEMS

Timeframe	Aug 2013 – March 2014
Cascadia Tasks	▪ Complete draft of Scope of Use document for review (2/28) ▪ Finalize Scope of Use document (3/20) ▪ Complete draft of Use Scenarios and Narratives Summary Report (3/6) ▪ Finalize Use Scenarios and Narratives Summary Report (3/27)
VIUP/IRURE Tasks	▪ Review (3/6) Scope of Use document ▪ Review (3/20) Use Scenarios and Narratives Summary Report
Deliverables/ Outcomes	▪ Final Scope of Use document (3/20) ▪ Final Use Scenarios and Narratives Summary Report (3/27)

Based on the identified user needs, feedback from IRURE and VIUP, and available resources, Cascadia will define the Tool's scope of use within the existing Vietnam urban planning system. This includes identifying the levels of urban planning (e.g., master, zoning, detailed), types of jurisdictions (e.g., regions, provinces, cities), and types and stages of projects (e.g., transportation, water supply, parks & green space) to which the Tool will apply. Cascadia will also work with IRURE and VIUP to develop Use Scenarios, in which Cascadia will further define the situations and methodologies by which users will employ the Tool as part of the urban planning process, as well as a tentative plan for rolling out the Tool more broadly across the country.

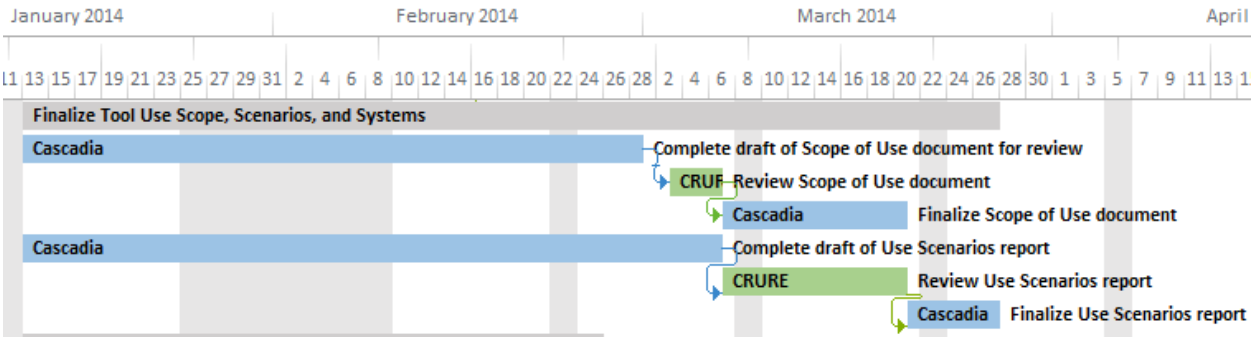


Figure 5-3. Task Timeline for Objective 2: *Finalize Tool Use Scope, Scenarios, and Systems*

5.1.3 EXPLORE AND GATHER CLIMATE IMPACTS AND BEST PRACTICES INFORMATION

Timeframe	Aug 2013 – March 2014
Cascadia Tasks	**Spatial Information** ▪ Finalize spatial information availability assessment (3/6) ▪ Submit draft spatial information integration plan to VIUP/IRURE for review (3/20) ▪ Finalize spatial information integration plan (3/31) **Sector-Specific Impact/Guidance Information** ▪ Finalize list of information sources (1/17) ▪ Submit complete draft of Tool content for review (3/6) and revise as needed (3/27)
VIUP/IRURE Tasks	▪ Review spatial information availability assessment (3/6) and integration plan (3/27) ▪ Review information source list (3/6) and draft Tool content (3/13)
Deliverables/ Outcomes	▪ Final Spatial Information Availability Assessment (3/6) and Integration Plan (3/31) ▪ Final Information Sources List (1/17) ▪ Complete draft Tool content (3/27)

Cascadia will work with IRURE and VIUP to identify relevant information for inclusion in the Tool, including from IMHEN, recent in-country adaptation work (e.g., Adapt HCMC report), and examples from across the world (e.g., New York City Adaptation Plan). Specifically, Cascadia and IRURE/VIUP will finalize an assessment of spatial information availability for the Tool, a plan for obtaining, generating, and integrating spatial information into the tool, and a list of information sources to be consulted for integration into the Tool's impact overviews and guidance information. The task will conclude with a complete draft of all Tool impact overviews and guidance information to be integrated into the initial Beta Tool.

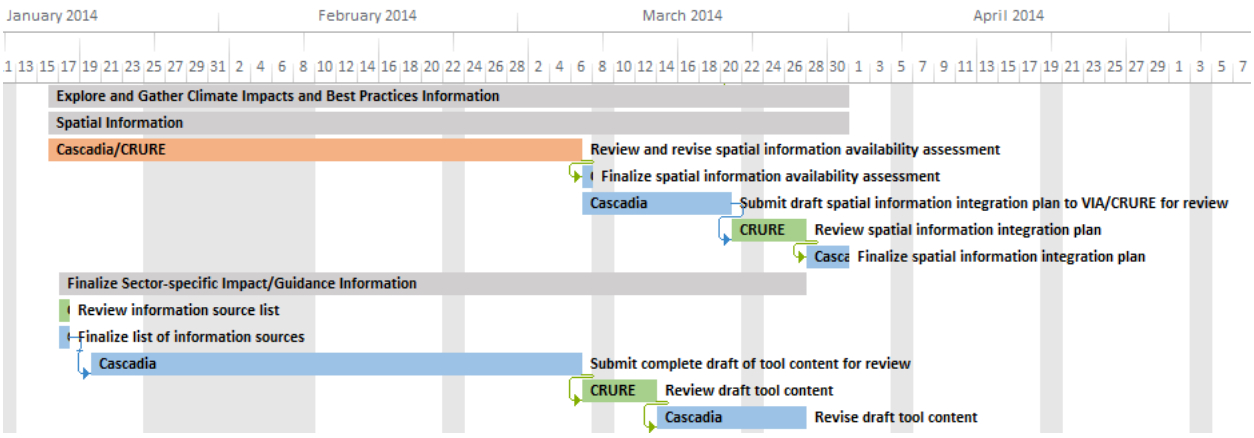


Figure 5-4. Task Timeline for Objective 3: *Explore and Gather Climate Impacts and Best Practices Information*

5.1.4 DEVELOP A TOOL TEMPLATE

Timeframe	Jan 2014 – April 2014
Cascadia Tasks	▪ Submit draft Tool Conceptual Model Summary for review (4/3) ▪ Finalize Tool Conceptual Model Summary (4/17) ▪ Submit draft Beta Tool based on conceptual model for review (4/10) ▪ Finalize draft Beta Tool (4/17)
VIUP/IRURE Tasks	▪ Review draft Tool Conceptual Model Summary (4/10) ▪ Review draft Beta Tool (4/15)
Deliverables/ Outcomes	▪ Final Tool Conceptual Model Summary (4/17) ▪ Initial Beta Tool (4/10) ▪ Final draft English Beta Tool (4/17)

With the user needs, scope and scenarios of use, and input information known, Cascadia will develop a Tool conceptual model and template that includes mapping elements, jurisdiction-specific inputs and outputs, and up-to-date climate information from the Institute of Meteorology, Hydrology, and Environment (IMHEN). Because currently available IMHEN maps are not of sufficient detail for planning, Cascadia will work with IMHEN to gather spatial information more appropriate for planning purposes, if possible. This template will serve as the basis for full customization and design.

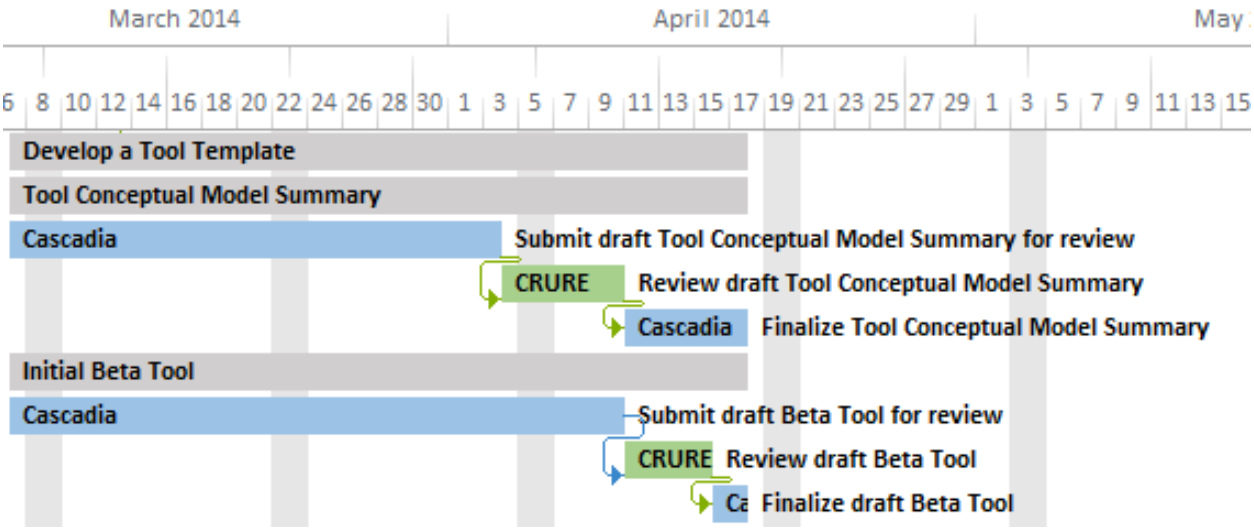


Figure 5-5. Task Timeline for Objective 4: *Develop a Tool Template*

5.1.5 BETA-TEST AND TRANSFER THE TOOL

Timeframe	April 2014 – May 2014
Cascadia Tasks	▪ Translate and internal beta-test of Vietnamese tool (4/17) ▪ Conduct external beta-testing of Vietnamese tool and site visits (4/18 – 4/30) ▪ Document beta-testing feedback (5/1)
VIUP/IRURE Tasks	▪ Identify and select beta-user team (4/14) ▪ Participate in beta-testing at IRURE/VIUP and help coordinate and provide representation at site visits (4/18 – 4/30)
Deliverables/ Outcomes	▪ Draft Vietnamese Beta Tool (4/17) ▪ Beta-testing trip (4/18 – 4/29)

Cascadia will work with IRURE to develop a translated version of the Tool. That version will be subject to feedback from three site visits around the country, and the Tool will be beta-tested internally and externally at VIUP/IRURE using predetermined testing scenarios. Beta testing will require development of a Tool user guide and training of the Tool to the beta-user team. Feedback from beta testing will be used to inform final Tool configuration for deployment.

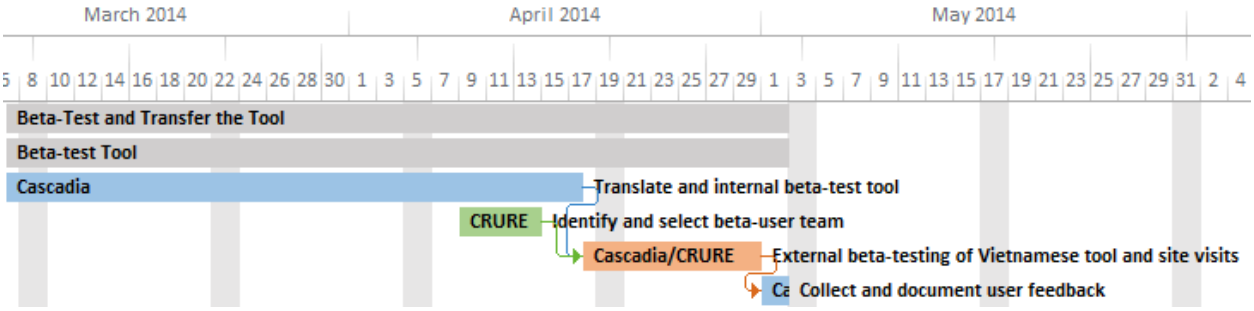


Figure 5-6. Task Timeline for Objective 5: *Beta-test and Transfer the Tool*

5.1.6 DEPLOY AND DISSEMINATE THE TOOL

Timeframe	May 2014 – August 2014
Cascadia Tasks	▪ Integrate beta-testing feedback into Vietnamese and English Tools (5/15) ▪ Conduct Tool translation and QA check (5/22) ▪ Submit draft training, user, and Tool administrative materials for review (5/28) ▪ Finalize training materials, guides, and agendas (6/18) ▪ Plan (6/27 – 7/14) and lead (7/23) Final Tool Dissemination Workshop
VIUP/IRURE Tasks	▪ Review draft training, user, and tool administrative materials (5/28 – 6/4) ▪ Participate in Tool training (6/19 – 6/26) ▪ Collaborate with Cascadia in planning and organizing national workshop (6/27 – 7/14) ▪ Participate in Final Tool Dissemination Workshop (7/23)
Deliverables/ Outcomes	▪ Final English and Vietnamese Tool (5/22) ▪ Tool training trip (6/19 – 6/26) ▪ Final Dissemination Workshop (7/23)

Once fully configured and tested, Cascadia will transfer the Tool to ten key IRURE/VIUP/MOC staff for deployment. Transfer will include training of future Tool administrators so that the Tool can be updated as new climate information becomes available or policies are adopted, instructions on how to configure the Tool for specific cities, and an exploration of Tool deployment on alternative technology platforms, such as the web. Cascadia will also disseminate the Tool to a broader group of ministry, department, city, and institutional leaders across the country through a national workshop. The workshop will explore the possibility of applying the Tool to more than 750 cities and towns in Vietnam.

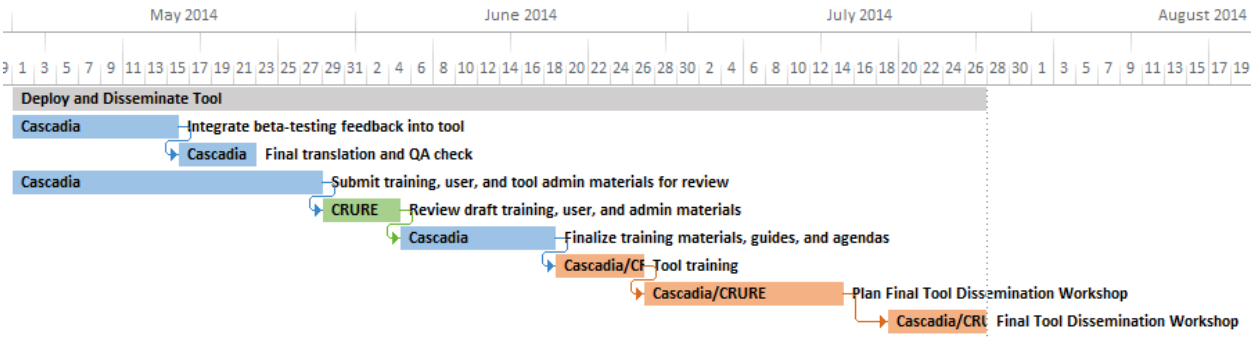


Figure 5-7. Task Timeline for Objective 6: *Deploy and Disseminate the Tool*

6. UNDERLYING CONCEPTS AND GOALS

6.1 GOALS

Ultimately, the goal of the Tool will be to **contribute towards climate resilience-building in Vietnam**. This contribution can manifest in many forms, including but not limited to the following:

- Enhanced understanding of sector-specific climate change impacts and response strategies
- Strengthened inter-sectoral communication and collaboration
- Revised processes or design parameters that increase resilience

6.2 CONCEPTS

The Tool will utilize the following climate change adaptation and resilience-building concepts:

1. Climate impacts can threaten primary development goals.
2. Adaptation means building resilience to anticipated impacts.
3. Project-specific and system-wide resilience are needed.
4. "Mainstreaming" is an efficient and effective means to build system-wide resilience.
5. Mainstreaming involves understanding both the impacts and response strategies that apply to a particular project.
6. Decision-support tools facilitate the mainstreaming process.

A description of each of these concepts is provided below.

6.2.1 CLIMATE IMPACTS CAN THREATEN PRIMARY DEVELOPMENT GOALS.

By increasing risks to human health, welfare, and ecosystems, climate impacts can threaten development goals such as poverty reduction, access to education, health improvements, and environmental sustainability.[2]

6.2.2 ADAPTATION MEANS BUILDING RESILIENCE TO ANTICIPATED IMPACTS.

Although physical climate changes such as increased temperature and precipitation are largely beyond local government control, the resultant damages of those impacts can be minimized through planning, design, and implementation that accounts for these anticipated impacts. Actions and strategies that help minimize potential climate change damages and impacts are known as "resilience-building" activities or "climate-resilient" development.

6.2.3 PROJECT-SPECIFIC AND SYSTEM-WIDE RESILIENCE ARE NEEDED.

Strategies for resilience building include *project-specific* approaches, such as dykes and response system improvements, and *system-wide* approaches, such as changes to land-use planning. Successful adaptation usually requires both approaches.

6.2.4 "MAINSTREAMING" IS AN EFFICIENT AND EFFECTIVE MEANS TO BUILDING SYSTEM-WIDE RESILIENCE.

"Mainstreaming" involves integration of climate change considerations into established decision-making, planning, and design protocols and processes. Climate-resilient development is not about conducting

strategies, programs, and projects in a completely new way – it is about adding considerations of climate into existing development decision-making to ensure that progress towards development goals is not undermined by climate impacts.[2] The ability of mainstreaming to penetrate multiple, diverse projects simultaneously and systematically makes it an effective and efficient strategy for building resilience.

6.2.5 MAINSTREAMING INVOLVES UNDERSTANDING BOTH THE IMPACTS AND RESPONSE STRATEGIES THAT APPLY TO A PARTICULAR PROJECT.

To consider climate change in a project design or plan, sector-specific impacts must be understood, as well as the available strategies or actions for minimizing those impacts.

6.2.6 DECISION-SUPPORT TOOLS FACILITATE THE MAINSTREAMING PROCESS.

Decision-support tools can streamline and simplify the process of mainstreaming through integration, synthesis, and dissemination of accurate and consistent climate change information and guidance.

LITERATURE CITED

Institute for Environmental Planning, Urban-Rural Infrastructure (IRURE). *Technical Guidance: Integration of Climate Change Considerations into Urban Planning in Vietnam*. (2013).

United States Agency for International Development (USAID). *Climate-Resilient Development: A Guide to Understanding and Addressing Climate Change*. (2013).

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